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The Effects of Errorless Compliance Training Interventions on Compliance Behavior on Students in the Home and Generalization in the School Setting

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THE EFFECTS OF ERRORLESS COMPLIANCE TRAINING INTERVENTIONS ON COMPLIANCE BEHAVIOR ON STUDENTS IN THE HOME AND GENERALIZATION IN THE SCHOOL SETTING

by

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ABSTRACT

THE EFFECTS OF ERRORLESS COMPLIANCE TRAINING INTERVENTIONS ON COMPLIANCE BEHAVIOR ON STUDENTS IN THE HOME AND GENERALIZATION IN THE SCHOOL SETTING

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Errorless Compliance Training (ECT) is a procedure used to lessen disruptive behavior using a gradual and noncorecive approach. In this study, parents of three school-aged children who demonstrated high levels of disruptive behavior at home and in the classroom were trained on the ECT procedure. ECT sessions took place in the home, with parents delivering requests. Generalized effects of ECT were assessed in the school setting. Baseline data were used to arrange requests into grouped Levels, ranging from Level 1 (requests of which individual is typically compliant) to Level 4 (requests in which individual is typically noncompliant). Using the ECT procedure, request levels were faded over time in a gradual fashion to ensure the highest probability of compliance. Results yielded increased compliance for all participants and both the home and school environments in all four levels of ECT.

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LIST OF ABBREVIATIONS

EACT	Errorless Academic Compliance Training
ECT	Errorless Compliance Training
EID	Effective Instruction Delivery
IOA	Interbserver Agreement
NAP	Nonoverlap of All Pairs

CHAPTER I – INTRODUCTION AND REVIEW OF THE LITERATURE

This study sought to add to the Errorless Compliance Training literature base by providing compliance generalization from the home to the school setting. Errorless Compliance Training increased compliance behaviors in the home for three participants, and results generalized from the home to school setting. As with Errorless Compliance Training goals, this was accomplished through the use of noncoercive practices.

Noncompliance is one of the most targeted childhood behavior problems in clinical practice today (Bernal, Klinnert, & Schultz, 1980; Charlop, Parrish, Fenton, & Cataldo 1987; Forehand & McMahon, 1981; Henry, 1987). Estimates state that about 12 to 22% of school-aged children suffer from an emotional, behavioral, or mental disorder (Adelman & Taylor, 2002). In children with behavioral disorders, interventions frequently target noncompliance (Handen & Gilchrist, 2006; McMahon & Forehand, 2003).

Noncompliance

Noncompliance occurs when a child fails to complete a given instruction (Stephenson & Hanley, 2010). Noncompliance can be measured empirically through assessing a child's initiation of complying with a request and the completion of the same request.

Teachers often cite behaviors that arise as a result of noncompliance, such as tantruming, due to poor academic performance and underdeveloped peer relationships (Roberts, Tingstrom, Olmi, & Bellipanni, 2008). Educational opportunities are disrupted when compliance levels fall below 40% (Rhode, Jenson, & Reavis, 1993). Addressing behavioral issues in the classroom detracts from instructional time for both the child and

his or her peers (De Martini-Scully, Bray, & Kehle, 2000). Additionally, these problem behaviors affect parents, teachers, and peers as well as the target child. Researchers have found that disruptive behavior in the classroom can influence a child's ability to develop adequate social skills and inhibit optimal academic performance. Researchers point to early identification and intervention in problem behaviors as an essential strategy (Gresham, Lane, & Beebe-Frankenberger, 2005).)

Compliance as a Keystone Behavior

Due to the aforementioned consequences associated with noncompliance, early intervention is key. Targeting noncompliance from an early age allows researchers to better understand noncompliance as an issue (Stormshak, Bierman, McMahon, & Lengua, 2000). This early dissection of the nature of noncompliance assures the best behavioral outcome for the child, as well as provides data to be used to alleviate noncompliance in other children in the future.

Fortunately, compliance has been identified as a "keystone" behavior, meaning that compliance training has an effect on other behaviors not targeted by the intervention (Barnett, Bauer, Erhhardt, Lentz, & Stollar, 1996). Certain behaviors, such as compliance and defiance, are functionally incompatible (Mace & Belfiore, 1990). In functional incompatibility, a prosocial behavior momentarily eliminates the value of reinforcement from a problem behavior (Mace & Belfiore, 1990). This nature of keystone behaviors gives clinicians the ability to alter problem behaviors through selective reinforcement and manipulation. Thus, compliance is often the target of an intervention due to its keystone properties. Gains in other areas due to an increase in compliant behavior range from decreases in oppositional behavior to an increase in

communication skills and on-task behavior (Ducharme, 1996; Ducharme, Atkinson, & Poulton, 2001; Ducharme & Popynick, 1993). Due to the keystone nature of compliance, a variety of procedures have been implemented to address noncompliance in children, including both consequent and antecedent strategies.

Consequent Strategies for Noncompliance

Contingent Reinforcement

Contingent reinforcement is the process of delivering reinforcement based on the presence of appropriate behavior or the absence of negative behavior. In one example of contingent reinforcement, Peed, Roberts, and Forehand (1977) implemented a compliance training program aimed at increasing child compliant behavior of twelve children. Parent behaviors recorded by researchers included rewards, attention, questions, commands, criticism, warnings, and time-out. Parent-child behaviors included in the study included child compliance, child noncompliance, and contingent attention. All behaviors were recorded as a rate per minute, and behavioral observations were conducted both at home and in a clinic.

In the first phase, mothers increased their use of reinforcement of appropriate behaviors exhibited by their children. Each mother was first instructed to not use commands, questions, or criticism. She was then instructed to provide attention contingent on child engagement in appropriate behavior. This was practiced in ten-minute sessions in the home, where the mother provided rewards (i.e., TV time, treats) contingent on appropriate behavior. The mother used this system to then increase the frequency of two desired behaviors. Researchers additionally recorded the use of alpha and beta commands, with alpha commands encompassing commands that are direct and

easy to comply with, whereas beta commands were vague and had little opportunity for reasonable compliance.

Time-out procedures were introduced in the second phase of parent training to decrease child problem behavior. If a child initiated compliance within 5 seconds of command delivery, the mother provided contingent attention. If compliance was not initiated, the mother would issue a time-out warning statement. If a child failed to comply within 5 seconds of the warning, time-out was initiated, where the child was required to sit quietly in a chair for 2 minutes. Following time-out, the command was re-issued.

Results indicated compliance gains following treatment procedures. Compliance gains were attributed to the treatment package and not maturation effects, as a control group showed no change in child compliance. Compliance gains were also generalized to the home setting, providing evidence for generalization across settings. Additionally, mothers trained to provide contingent attention increased their use of contingent reinforcement following treatment, illustrated by an increase at 7% before treatment to 30% post-treatment (Peed et al., 1977).

Additionally, baseline levels indicated that mothers used beta commands over half of the time, whereas intervention data indicated decreases in the use of beta commands. Beta commands have been shown to increase the frequency of maladaptive parent-child interactions as well as negatively influence child compliance (Peed et al., 1977). Therefore, providing a child an appropriate opportunity to respond was found to increase compliance levels.

Russo, Cataldo, and Cushing (1981) implemented a compliance training program for children that frequently displayed problem behaviors such as hair pulling, aggression, and thumb sucking. Three participants, ages 3, 6, and 7, were referred for noncompliance by their parents as well as an agency. Additionally, participants exhibited two negative behaviors, including aggression, tantruming, or self-injurious behavior. For the purpose of this study, compliance was defined as making an appropriate response in 5 seconds or less, and compliance was measured as a percentage of correct responses. Contingencies were based on child compliance to requests, and compliance was rewarded with an edible, physical praise, and verbal praise in the first intervention phase. The second intervention phase used a token economy contingency, where participants earned pennies that could only be spent after a predetermined criterion had been met.

Results indicated that gains in compliance were directly related to the reinforcement condition. Compliance increased across all three participants, with problem behaviors increasing upon a return to baseline and a discontinuation of compliance training procedures, and problem behaviors decreasing upon reimplementation (Russo et al., 1981).

Forehand et al. (2011) initiated a parent-delivered compliance package for 39 children between the ages of 3 and 6. Parents identified and reported occurrences of problem behavior over three days and were then distributed into two cohorts: Group Curriculum and waitlist. The group curriculum came from Parenting the Strong-Willed Child (Forehand & Long, 2002) and included two-hour sessions once every six weeks on behavior management techniques. Skills included ignoring problem behavior and positive reinforcement for compliant behavior.

Results indicated decreases in child problem behavior following the Group Curriculum instruction (Forehand et al., 2011). Additionally, parents showed an increase use of positive reinforcement after attending Group Curriculum sessions. Additionally, results were maintained two months following Group Curriculum sessions and parent satisfaction was high.

Punishment

Punitive approaches to problem behavior, such as reprimands and corporal punishment, have been linked to antisocial behavior, are related to distrust of caregivers, and promote the engagement of negative behavior (Gottfredson, Gottfredson, Payne, & Gottfreson, 2005; Mulder et al. 2006; Nikiforakis, 2008). Unfortunately, teachers commonly use reprimands to address problem behavior (Turner & Watson, 1999).

Simons and Wurtele (2010) investigated the relationship between parental corporal punishment and subsequent child behaviors. Participants consisted of 102 families with children between the ages of 3 and 7. Parents' beliefs about punishment were assessed through a series of rating scales: the Revised Conflict Tactics Scale to assess frequency of punishment behaviors, the Parent Discipline Attitudes Survey to assess the frequency and acceptability of punishment techniques, and a modified version of the Parents Beliefs about Punishment Vignettes to assess possible parental reactions to child transgressions. Child participants were administered the Children's Beliefs about Punishment Vignettes, presented in pictorial form to assess degree of child misbehavior and potential punishments, as well as the Children's Problem-Solving Vignettes, to assess the children's conflict resolution abilities.

Spanking was endorsed as an effective way to discipline their children by 71% of parent participants. Results indicated that 87% of children whose parents had reported frequent punishment for misbehavior endorsed spanking of other children. Additionally, 79% of children that were spanked by parents were also more likely to endorse hitting a peer or sibling during arguments. Strikingly, 100% of children that had not been punished, according to parental report, endorsed using conflict resolution tactics during peer or sibling arguments (Simons & Wurtele, 2010).

Results indicate that parental attitudes and behaviors towards punishment can be transmitted to children. More so, children who had experienced corporal punishment were more likely to be accepting of future instances of corporal punishment. Additionally, children are likely to generalize corporal punishment to situations involving siblings and peers (Simons & Wurtele, 2010).

Antecedent Strategies for Noncompliance

Effective Instruction Delivery (EID)

EID is a set of parent behaviors that can increase compliance levels in children. Five components commonly used for EID are (a) issuing the command in close proximity to the child, (b) using descriptive wording, (c) allowing 5 seconds for the child to initiate compliance, (d) requiring eye contact before command delivery, and (e) phrasing the command as an instruction (Ford et al., 2001).

Everett et al. (2005) showed that EID alone increases compliance in children above baseline levels with the addition of contingent praise as a consequent strategy. In this study, the combination of EID and Contingent Praise increased compliance levels for all participants for indirect and direct commands. Baseline levels of compliance were

32%, 33%, 34%, and 28% for each of the four participants (Everett et al., 2005). After teaching parents to use eye contact and contingent praise, significant increases in compliance were evident in addition to changes in level when using visual analysis, lending confidence to the important of contingent praise (Everett et al., 2005).

Bellipanni, Tingstrom, Olmi, and Roberts (2013) evaluated the effects of both antecedent and consequent manipulations, including EID and time-in, as well as contingent praise. Using a nonconcurrent multiple baseline across participants, teachers used the aforementioned components with four students observed to have compliance levels below 40%. Participants ranged in age from five to nine, and every teacher had over five years of teaching experience. Initiation compliance served as the primary dependent variable, operationally defined as beginning compliance within five seconds of command delivery.

For the EID phase, teachers delivered at least ten commands using all five EID components: delivering a command with eye contact, in close proximity to the child, delivering commands phrased as directives, using a quiet voice, and allowing the child five seconds to initiate compliance. The time-in phase included at least twelve instances of verbal praise and eye contact contingent on appropriate behavior. Phase three involved EID paired with time-in, and phase four involved EID, time-in, and contingent praise. Follow-up observations were initiated one month following the last treatment phase.

Results indicated that every participant showed gains in compliant behavior. The use of time-in aided in compliance increases for the first pair of participants, from 24% to 60% and from 33% to 85%. The use of effective instruction delivery aided in compliance

increases for the second pair of participants, from 37% to 89% and from 25% to 65%. The combination of EID and time-in increased compliance for three participants, at levels of 84%, 91%, 67%, while one participant decreased from 85% to 82%. The addition of contingent praise for compliance resulted in compliance levels of 92% and 89% for the second pair of participants. Follow-up data showed compliance decreases in three participants while one participant increased in compliant behavior. Results demonstrate effects of effective instruction delivery components, both individually and as a composite (Bellipanni et al., 2013)

High Probability Command Sequences

High probability command sequences can be used to teach a child to comply with increasingly more challenging requests. Otherwise known as behavioral momentum, high probability command sequences describes the process of delivering a command to a child with which they are likely to comply, followed by a request in which compliance is not expected to be as high.

According to Cooper, Heron, and Heward (2007), high probability requests are requests in which the learner has a history of compliance. In a high probability request sequence, high probability requests are presented as a group, followed by one low probability request, or a request in which the learner has historically not complied with.

Belfiore, Basile, and Lee (2008) used a high-probability command sequence to increase compliance in a seven-year-old male with Down syndrome. The participant was able to understand one-step requests and complied with preferred requests. A single subject withdrawal design was implemented in a life skills classroom for children with developmental disabilities. Only low-probability commands without the high probability

command sequence were issued during baseline, with high probability command sequences being initiated during intervention. Baseline yielded 13% compliance, with the intervention increasing compliance to a mean of 78%. Withdrawal of intervention resulted in a mean of 17% compliance, and return to intervention yielded compliance with a mean of 85%. When fading the intervention, compliance levels ranged from 70-90%.

Austin and Agar (2005) used high probability command sequences in kindergarten and pre-kindergarten classrooms to increase compliance. Four children from two classrooms participated in the study, and all participants were general education students. Each teacher identified high and low probability requests for each child, along with areas and times of day in which compliance was a concern. Commands identified by teachers included "look at me" and "be quiet." During baseline, teachers delivered at least four low-probability requests, followed by contingent praise. Teachers were then trained on the high-probability command sequence, and were then instructed to deliver three high-probability commands followed by a low-probability command four times during each session. Three out of four participants showed compliance gains for low probability requests, illustrating that high-probability command sequences can increase compliance of typically developing children in the classroom.

Mace and colleagues (1988) investigated the effects of behavioral momentum to address compliance deficits. Researchers implemented requests in which the participant was likely to comply followed by a low-probability request. In each of the five experiments conducted, high probability command sequences were shown to result in an increase in compliance. In experiment one, researchers implemented a behavioral

momentum program with a 36-year old male with an intellectual disability who was living in a group home. Positive reinforcement for completion of tasks had been used in the past, but was reported to only work for months at a time. Requests were divided into "do" and "don't". Baseline levels yielded 47% compliance with "do" requests and 53.5% compliance with "don't" requests. In the final experimental phase, high probability command sequences resulted in compliance levels of 93% for "do" commands and 90% for "don't" commands (Mace et al., 1988).

Experiment two was conducted with a 44-year old male with an intellectual disability and Down syndrome. An attention control condition was implemented to provide the participant with attention prior to a low-probability request. Baseline data indicated mean compliance of 26% to low-probability requests when not preceded by a high-probability request. Initiation of a high-probability command sequence increased compliance to 73%, whereas the attention control condition only yielded compliance levels with a mean of 38% (Mace et al., 1998).

Experiment three was conducted with the same individual as in experiment one. In this experiment, interprompt time (IPT), or the time in between the last high-probability command to the delivery of the low probability command, was manipulated (Mace et al., 1988). Results of this study indicate longer IPT intervals do not result in increased compliance levels. Clinical implications include that low-probability commands should be delivered immediately after a high-probability command.

Experiment four was conducted on two men with intellectual disabilities. The dependent measure for this study was compliance latency, or amount of time between delivery of a request and initiation of compliance. For both participants, lack of a high-

probability command sequence showed an increase in compliance latency (Mace et al., 1988).

In experiment five, researchers used high-probability command sequences on one adult with a developmental disability to reduce excessive time spent in the shower. Following baseline data collection, researchers implemented a contingency management condition. In this condition, when the participant displayed off task behavior, he was shown preferred items and could obtain them contingent on on-task behavior. Other conditions included a prompt condition, in which the command was repeated every fifteen seconds, and a high-probability command sequence condition. All three conditions resulted in a decrease in shower time, with high-probability command sequences yielding the best results (Mace et al., 1988).

Errorless Compliance Training

Errorless Compliance Training (Ducharme & Popynick, 1993) is a compliance training procedure in which demands are given to an individual in order of high to low probability. Within Errorless Compliance Training, demands are increased gradually to ensure that the child will be compliant throughout the compliance training procedure, while maintaining high levels of contingent positive reinforcement. Levels of commands are determined through baseline assessment for each individual child. So, commands and levels are specific to each individual participating in the intervention.

For example, level one requests may consist of sample commands, such as “Come here.” This is a relatively simple command for most children that will most likely lead to compliant behavior, thus being established as a level one command. An upper level

command, falling under levels 2, 3, and 4, consists of a much more challenging task for a child to completely execute. An example might be, "Go get your toy." Upper level commands are commands that don't always initially lead to compliance. Again, commands and levels are specific to each child, so there is no definitive command associated with a certain level.

Errorless Compliance Training is based on Errorless Teaching, procedures that can be used to train a response to accuracy while only allowing for ten percent or less of errors (Lancioni & Smeets (1986). Errorless teaching is able to complete these goals by allowing for gradual implementation of procedures. Errorless Teaching is also aided by the fact that discrimination training is always done at the level in which the child is currently functioning.

In one of the first studies of Errorless Compliance Training, compliance to maternal requests was increased for four children with developmental disabilities using a within subjects nonconcurrent multiple baseline design (Ducharme & Popynick, 1993). Completion compliance was assessed for all participants, using an operational definition of initiation within ten seconds and completion within 40 seconds of command delivery. Maladaptive behaviors were also noted, including screaming, crying, and verbal oppositions to requests.

After completing a probability questionnaire of child compliance, parent participants were then videoed delivering commands to their children to be assessed for compliance likelihood. Requests were then arranged into levels according to compliance data. Ten requests were selected for baseline data analysis, followed by four intervention phases. Seven requests were presented for each level of Errorless Compliance Training

with two sessions occurring each week. Transition sessions occurred between phase sessions for increased gradual implementation, using requests from both the previous and next level. Generalization data were collected for all four levels of Errorless Compliance Training, using requests to which the child had not yet been exposed. Follow-up data were collected using requests from each of the four levels.

Baseline data yielded a mean compliance level of 44% across all four participants, with 85% compliance to level 1 requests, 60% to level 2 requests, 39% to level 3 requests, and 16% to level 4 requests. In intervention phases, participants complied with 90% of requests in phase 1 of Errorless Compliance Training, followed by 89% of level 2 requests, 85% of level 3 requests, and 86% of level 4 requests. Increased compliance was seen in all four levels of Errorless Compliance Training and follow-up data indicated that gains were maintained for up to three months for three participants (Ducharme & Popynick, 1993).

Generalization data indicated that training only on high probability requests would not be sufficient for generalization, and that training participants on all four levels of Errorless Compliance Training procedures was necessary to produce desired effects. Additionally, parent satisfaction surveys obtained from three parent participants indicated that parents scored 71%, 93%, 43% of items as highly acceptable.

Results highlight the fact that high levels of compliance could be achieved in children who were previously noncompliant to maternal requests, without using punishment procedures. High levels of compliance were additionally coupled with a reduction in maladaptive behaviors, and generalizability occurred for most request levels.

Limitations to this study consist of a lack of component analysis, so the degree to which components contribute to compliance gains is unknown (Ducharme & Popynick, 1993). Additionally, limitations include a lack of generalizability across persons or settings. Despite these limitations, as one of the first studies on Errorless Compliance Training, this study provided a starting point for a growing body of literature.

In a subsequent study of Errorless Compliance Training in schools, two five-year old girls with Down's syndrome showed an increase in compliant behavior after completion of the Errorless Compliance Training procedure (Ducharme & DiAdamo, 2005). The study was conducted using a multiple baseline design across subjects with a reversal. Before implementation of Errorless Compliance Training, both students were referred for disruptive behavior in the classroom. After completing the Compliance Probability Checklist (Ducharme & Drain, 2004) modified for the classroom, nine compliance sessions were implemented to assess compliance to requests. During baseline, a trained graduate student presented only level 4 requests. Only level 1 requests were presented by the graduate student during the first intervention phase, and a return to baseline included only level 1 requests again. The last treatment phase included level 4 requests similar to the first treatment phase presented by the graduate student. In addition, social validity was assessed through probes delivered by the children's teacher before, during, and after the intervention.

Probability analysis data indicated child compliance percentages for each level of Errorless Compliance Training. The first child showed 89% compliance to level 1 requests, 69% to level 2 requests, 51% to level 3 requests, and 26% to level 4 requests. The second child showed 83% compliance to level 1 requests, 56% to level 2 requests,

31% to level 3 requests, and 15% to level 4 requests. Baseline data indicate that the two participants' compliance to level 4 baseline requests were 17% and 18%.

Treatment data for both participants indicated high levels of compliance (82% and 72%) to level 1 requests, as expected based on probability analysis data collected previously. Compliance to level 2 requests indicated compliance gains, with compliance level percentages of 80% for both the first and second child. Adherence to level three requests indicated improvements, with the first child complying with 83% of requests and the second child complying with 78% of requests. Level four treatment data indicate significant compliance gains for both participants, with compliance to requests falling at 88% for the first child and 72% for the second child (Ducharme & DiAdamo, 2005).

Teacher probe data indicated improvements as well. Baseline compliance to level four requests averaged 52% for the first child and 33% for the second child. Compliance to level 4 requests produced means of 84% for the first child and 83% for the second child. Follow-up data were not collected and maintenance of effects cannot be hypothesized. More importantly, although researchers collected treatment data across persons, data were not collected across settings as all sessions occurred at school. Teacher probe data are also lacking treatment integrity and IOA data, making these conclusions tentative at best. This pilot study suggests more data on Errorless Compliance Training in the schools should be collected to replicate results.

Ducharme, DiPadova, and Ashworth (2010) initiated Errorless Compliance Training procedures to address behavioral deficits in a seven-year-old child. The participant had been diagnosed with an intellectual disability, and met criteria for attention-deficit hyperactivity disorder, oppositional-defiant disorder, and conduct

disorder under DSM-IV criteria. Errorless Compliance Training was initiated to address behavioral issues at home, as well as serve as a replacement for non-positive behavioral procedures currently in place.

The participant's mother was trained on Errorless Compliance Training procedures using modeling and performance feedback, and baseline compliance requests were formulated based on the Compliance Probability Checklist (Ducharme & Drain, 2004). Additionally, the participant's mother collected data, notating a check or an 'X' for requests initiated within 10 seconds and completed within 40 seconds. Requests were divided into four levels based on compliance likelihood, although it should be noted that only a small number of items were identified as always resulting in compliance. Thus, compliance level 1 consisted of requests in which the participant complied 56-75% of the time (Ducharme et al., 2010).

In addition to a home-based intervention, Errorless Compliance Training procedures were also conducted at the participant's school. Based on a teacher-completed Compliance Probability Checklist that included academic requests, the participant's teacher was trained on request delivery and data collection procedures. To be consistent with procedures in place at home, the operational definition of compliance remained the same.

Following baseline data collection, the participant's mother began level 1 of Errorless Compliance Training in the home and additionally provided praise for compliance. As maternal praise proved to not be reinforcing to the participant, tangible reinforcers (i.e., stickers) were initiated during the first transition phase. The addition of tangible reinforcers resulted in compliance levels of 94% (Ducharme et al., 2010).

Appropriate Errorless Compliance Training procedures continued during level 3 requests, with compliance levels averaging 79%. Compliance to level 4 requests averaged 73% (Ducharme et al., 2010).

Intervention procedures at the participant's school followed the home intervention protocol with the exception of transition phases and tangible reinforcement. The participant complied with level 1 requests a mean of 88%, and level 2 requests a mean of 85%. The participant complied to a mean of 91% of level 3 requests and 78% of level 4 requests. It should also be noted that compliance gains attained through Errorless Compliance Training allowed the participant to attend general education classes for half of the school day (Ducharme et al., 2010). Observations conducted in the home two and four weeks following treatment included the fading of tangible reinforcement. The participant exhibited compliance levels of 90% and 91% at 2 and 4 weeks following intervention.

Limitations of the study include a lack of follow-up data in the schools, as data were reportedly not able to be collected in that setting. The lack of knowledge of maintenance in the school setting is important, especially given that compliance gains in the school setting had significant implications on the participant's placement in a general education classroom. Additional limitations include a case study format of one participant and the potential lack of generalizability of data. Although compliance gains were made through the introduction of Errorless Compliance Training for this one participant, generalizability to other participants is limited given the specific diagnoses of the individual.

Generalizability also comes into question when assessing for generalization across persons. Because Errorless Compliance Training was initiated in both the home and school setting, it is unknown if Errorless Compliance Training would have produced compliance gains in the school without teacher training. The present study seeks to directly address this limitation by assessing for generalizability to school settings when Errorless Compliance Training is not concurrently implemented with home-based intervention.

Errorless Compliance Training has also been modified to include Errorless Academic Compliance Training. Errorless Academic Compliance Training uses the Errorless Compliance Training procedure as applied to academic related requests, as opposed to purely compliance related requests (Ducharme & Drain, 2004). For Errorless Academic Compliance Training, baseline results determine levels of requests, as stated in Errorless Compliance Training protocol.

In a recent study, Errorless Academic Compliance Training was implemented in the home with children with autism spectrum disorders (Ducharme & Drain, 2004). As children with autism spectrum disorders frequently exhibit noncompliant behaviors when presented with requests, Errorless Academic Compliance Training was initiated to increase compliance in a non-coercive manner. Using a nonconcurrent multiple baseline design across participants, parents delivered academic and nonacademic requests at home with their children. Five participants were included in the study, and all had been referred to a community agency that works with children with developmental disabilities.

Prior to data collection, parents completed the Compliance Probability Checklists (Ducharme & Drain, 2004) during a parent-training workshop. Errorless Compliance

Training was also introduced to parents during this workshop, and background information on all participants was collected. Level 3 and 4 requests were selected at this point. A second parent-training workshop provided an opportunity to teach parents how to deliver requests via role-play and record data. Baseline compliance sessions included parental delivery of 34 requests, and parents were asked to meet child noncompliant behavior with typical practices but to avoid spanking. A request hierarchy was developed after baseline, forming levels 1 through 4. Approximately six academic requests fell in each level. Four of these six were used in treatment, and treatment data sheets were made for each participant. The remaining two were used for generalization assessment. Examples of academic requests included "draw me a picture."

During phase one of Errorless Compliance Training, parents were instructed to deliver only level one academic requests. Tokens were used contingent on compliance for later access to tangibles. Transition sessions between phases occurred after compliance levels reached 75% or higher for several days, and involved combining requests from the two levels it bordered. For phases two, three, and four, procedures were identical to phase one, with the exception of increasing levels for each phase, up to level four requests in phase four.

Mean compliance probability for baseline across all children was 88% for level one requests, 71% for level two requests, 57% for level three requests, and 35% for level four. In the third phase, mean compliance to level three requests improved to 86%, and all participants were responding to level four requests at high levels in phase four (Ducharme & Drain, 2004). Generalization effects were seen for unlearned requests, and effects were maintained six months post-treatment. Mean generalization to new

academic requests was 83% for level three requests and 85% for level four requests. Mean generalization to general requests was 79% for level three requests and 78% for level four requests (Ducharme & Drain, 2004). Follow-up data also indicate the success of Errorless Compliance Training, with compliance levels above 70% for all sessions but two (Ducharme & Drain, 2004).

Errorless Academic Compliance Training has been found to be successful for increasing compliance in individuals with autism spectrum disorders without the use of punitive measures. Additionally, data indicate that Errorless Compliance Training can generalize to unlearned requests, as well as to generalization across type (i.e., academic to general) (Ducharme & Drain, 2004). Although data indicate strong support for the generalization of Errorless Compliance Training as a whole, these data do not incorporate generalization across settings or persons (i.e., home to school).

Ducharme and Ng (2012) used the Errorless Academic Compliance Training Procedure in a school setting. One special education teacher and two support staff members implemented procedures in the special education classroom, with three elementary school males diagnosed with an autism spectrum disorders. For the purpose of this study, each adult was paired with a student. A multiple baseline across participants design was used with student compliance and on and off task behavior serving as the dependent measures. Compliance was measured as initiation within ten seconds and completion within sixty seconds, while on and off task behavior were observed during academic work time for five-minute sessions using 10-second partial interval recording.

Teachers used the Academic Compliance Probability Checklist (Ducharme & Drain, 2004), comprised of 35 academic tasks and 33 general requests, to assess believed child completion compliance. Teachers were additionally given a reinforcer checklist to identify potent rewards for students, as well as a measure of treatment acceptability. Baseline data were collected based on the delivery of 24 requests during the school day, with baselines ranging from 13-33 sessions. Following baseline, a hierarchy of requests was developed for two students, while the third participant showed no problem complying with requests. A second baseline was conducted for the third participant with never before used requests, and only two requests fell below 25% (Ducharme & Ng, 2012). For this reason, this participant only had three levels of requests as opposed to the standard four.

In the first treatment phase, level one requests were presented to students. Transition sessions occurred between level changes, and included requests from the previous and next level to add to Errorless Compliance Training's graduated approach. Phases 2, 3, and 4 followed with implementation similar to phase one, but with the next level of ECT. Treatment data show high levels of compliance to level one requests, with mean percentage at 85%, 100%, and 96%. Mean compliance to level two requests was 73%, 69%, and 97%, and mean compliance to level three requests was 85%, 100%, and 83%. In level four, mean compliance was 69% and 100%, highlighting substantial gains in compliance for those two participants. Follow-up data show improvements were maintained (Ducharme & Ng, 2012).

All three participants displayed an increase in on-task behavior from baseline to treatment, with on-task gains also being maintained through follow-up, with mean

improvement at 43% (Ducharme & Ng, 2012). Off-task and aggressive behaviors were also reduced during implementation of Errorless Academic Compliance Training. Overall, results demonstrate that Errorless Academic Compliance Training can increase time spent engaged in appropriate classroom activities as opposed to escape maintained problem behaviors. Although data show clear effects of Errorless Academic Compliance Training and substantial gains in both compliance and on-task behavior, the lack of procedural integrity data does not lend much confidence that procedures were taught with the highest degree of certainty. Additionally, generalization data were not collected, so it is unknown if these compliance gains transferred to other people (i.e., parents) or settings (i.e., home).

As a replication of Ducharme and Drain's 2004 study on Errorless Compliance Training, Errorless Academic Compliance Training was initiated with a larger sample size of eight individuals with autism spectrum disorders (Drain, 2012). Participants were obtained from a waitlist for a behavioral agency, and all had an autism spectrum diagnosis, were between the ages of 3 and 8, engaged in problem behavior when presented with a demand, and displayed subpar social skills. Six males and two females were included, with an average age of 55 months. Based on the Vineland Adaptive Behavior Scales -2nd edition, participants were divided into two groups. Group A included participants diagnosed with Autism under DSM-IV and displayed poor social skills, while group B participants displayed better language abilities.

Using a nonconcurrent multiple baseline design across participants, child compliance, child compliance with joint attention, and child social interactions were assessed. Child compliance data were recorded by parents, and by an observer for IOA

purposes when necessary. Compliance was defined as initiation within ten seconds and completion compliance within 40 seconds, or within a reasonable time period for more complex requests. Child compliance with joint attention was recorded via video at the home, with sessions lasting around 60 minutes. Child compliance with joint attention was defined exactly as compliance was, with the addition of the child demonstrating one of the following behaviors: looking at the parent with their back to the task, completing the request without vocalizing, commenting on completion, asking questions pertaining to the request, or looking only at the parent's face. Child social initiations were recorded from videotaped sessions and defined as a child independently initiating social interest (Drain, 2012).

Parents completed Compliance Probability Checklists (Ducharme, 1996) to identify general requests as well as requests associated with academic and play tasks that the child is likely to comply or not comply with, as well as a measure of child's preferred activities, a measure of treatment acceptability, and measure to assess the child's social skills. During baseline data collection, parents delivered as many of the 36 requests as possible throughout the day. Parents were told, as in previous studies, to use their typical parenting strategies but refrain from spanking children. If a child complied with a given request, a check was written, while if a child did not comply, an X was marked. Parents also implemented social engagement activities as outlined by scripts provided by the researcher. Corrective feedback was given to parents following all sessions of Errorless Compliance Training.

After baseline data were collected, compliance for the 36 requests was calculated, and requests were divided into four levels based on percentage of compliance. Separate

data sheets were made for each child containing his or her own hierarchy of commands. Phase one of intervention involved the delivery of only level 1 requests, and children were rewarded (i.e., praise, high fives, tangibles) for compliance. Transition sessions occurred between phases, and incorporated requests from the previous phase as well as the next phase for transition purposes. Phases 2, 3, and 4 involved treatment procedures similar to phase 1, but with corresponding levels of Errorless Compliance Training.

Generalization and follow-up sessions were also conducted in children's homes. Compliance procedures continued, but any tangible reinforcement was removed. Generalization sessions included requests from phases 3 and 4 that were not included in treatment sessions. Follow-up sessions occurred two months and six months after treatment, and only used level 4 requests. Parents implemented two social engagement activities following completion of follow-up, as well as rating scales.

Mean baseline compliance levels for group A participants were 91%, 77%, 51%, and 24%, and 97%, 78%, 63%, and 37% for group B. Treatment data for group A indicate compliance to level 1 requests was 90% and 97% for group B. Data from phase 2 and level 2 saw an increase in group A's compliance levels by 15% and group B's mean compliance levels by 17% from baseline. Phase three and level three produced the most significant results, with group A's mean compliance increasing 40 percentage points from 51% to 91% from baseline, and group B's mean compliance levels increasing 29% from 63% to 92%. Data from phase four showed group A's mean compliance percentage to be 88% and group B's to be 95% (Drain, 2012). Generalization data indicate gains in both unlearned academic requests as well as general requests and follow-up data suggest maintenance of Errorless Compliance Training effects (Drain, 2012).

Although results boast generalization of Errorless Compliance Training effects to untrained requests, compliance was not assessed for generalization across persons or settings. The present study seeks to address both of these limitations by assessing for compliance generalization effects both to the school setting as well as from the child's parent to their teacher.

Generalization

Generalization is defined as the occurrence of behavior under a condition in which it was untrained (Stokes & Baer, 1977). Researchers can only claim that a project has generalized when procedures do not need to be manipulated to create behavior change (Stokes & Baer, 1977). Generalization typically requires certain procedures to be implemented in order to increase the likelihood of that certain behavior will occur in an additional setting, to an untrained response, or to a different stimulus.

Generalization occurs infrequently without some type of programming (Stokes & Baer, 1977). To increase the likelihood of generalization, practitioners should choose target behaviors that can be maintained by natural reinforcement contingencies. Behaviors that operate under natural contingencies (i.e., without practitioner's effort) are functional for the learner, and thus preferred as they allow the learner contact with reinforcement that promotes behavior maintenance (Cooper et al., 2007). Practitioners should also clearly identify settings and situations in which generalization should or should not appear after the behavior has been trained (Copper et al., 2007). This can be done by identifying all forms of desired behavior, the extent of generalization that should be required of the learner, and the priority in which to initiate programming (Cooper et al., 2007).

Generalization can be improved through multiple routes. One way practitioners can increase the likelihood of generalization is through teaching multiple stimulus conditions and response requirements (Cooper et al., 2007). For example, practitioners should teach the learner to respond to multiple examples, as opposed to merely one. By increasing the examples the learner comes in contact with, the probability that the learner will respond to untrained examples increases. Generalization can also be improved by making the instructional setting and generalization setting similar. This can be done through incorporating common stimuli. Common stimuli in both environments can be beneficial for promoting generalization for a number of reasons, including that training cannot always occur in the natural setting (Cooper et al., 2007). Practitioners can also make settings appear more similar by teaching loosely (i.e., varying non-essential portions of a setting). Teaching loosely increases the likelihood that a certain stimulus will not have control over the target behavior. Additionally, teaching loosely by including multiple stimuli can serve as a "catchall" for stimuli that may occur during generalization (Cooper et al., 2007).

Another way in which practitioners can promote generalization is my maximizing the learner's contact with reinforcement in the generalization setting. This can be done through teaching behaviors that are reinforced by naturally occurring stimuli. Because this is not always possible, alternate routes for contacting reinforcement can be approached. One way this can be done is through programming of indiscriminable contingencies, where the learner does not know which responses will be reinforced. Using an intermittent schedule of reinforcement increases the likelihood that the target behavior will occur after reinforcement has ceased (Cooper et al., 2007). Similarly,

delayed rewards can be used to program indiscriminable contingencies, delayed rewards only occur after an amount of time has elapsed, making the reward contingent on occurrence of behavior a certain passage of time ago (Cooper et al., 2007).

Generalization can also be mediated through a contrived mediated stimulus (e.g., visual schedule, prompting device). To work in a generalized setting, the device must be able to be transported between settings. The mediating stimulus is functional in that it prompts the learner to perform a target behavior, therefore promoting occurrence in a generalized setting (Cooper et al., 2007). Lastly, generalization can be trained to occur. Reinforcing variability in responding increases a learner's behavior repertoire, and therefore future occurrences of behavior. Even more simply, a practitioner can tell the learner to generalize to another setting (Cooper et al., 2007). Generalization may also be promoted through sequential modification, which involves a systematic evaluation of procedures used to promote behavioral change in the setting in which the behavior is expected to occur (Stokes & Baer, 1977). Thus, training is explicitly conducted in the generalization setting.

Research Questions

1. Will implementation of Errorless Compliance Training in the home setting increase compliance with parental requests at home?
2. Will implementation of Errorless Compliance Training in the home setting result in generalized improvements with teacher requests in school?
3. Will implementation of Errorless Compliance Training produce improvements in parental stress, as measured by the PSI-SF?

CHAPTER II - METHODS

Participants

Participants consisted of two elementary school-aged children enrolled in general education classrooms, and one eighth-grade student enrolled at a specialized school for children with disabilities. Baseline data were collected for two additional participants who withdrew prior to collection of intervention data. A modified compliance training service was provided for these families. Participants were recruited from a university-based training clinic in the southeastern United States. Inclusionary criteria included both teacher and parent reports of noncompliance, demonstrated in both home and school settings. Parental and teacher consent (Appendices B and C) as well as child assent (Appendix D) were obtained prior to participation in the study. Prior to the start of the study, permission from The University of Southern Mississippi Institutional Review Board was received (Appendix A).

Taylor was a seven-year-old African American male attending first grade in a general education classroom. Taylor has no diagnoses and had never received academic or behavioral services prior to inclusion in this study. Because he frequently exhibited noncompliant behavior after school at a daycare facility, ECT was implemented at his daycare rather than in his school classroom. Taylor's instructor was an African American male who worked as an after school daycare program instructor.

Samuel was a twelve-year-old African American male enrolled in a school for students with developmental disabilities. The most recent assessment data available indicate an FSIQ of 60 (Wechsler, 2003) as obtained from a clinic-based assessment, as well as impairments in adaptive functioning across multiple areas, in addition to

diagnoses of Autism Spectrum Disorder and Mild Intellectual Disability. His mother expressed interest in compliance training due to continued noncompliant behavior in multiple setting (i.e., clinic, school). Samuel's teacher was a 33-year-old Caucasian female with a Bachelor's degree in History. She was currently in her eighth year of teaching.

Francis was a six-year-old African American male attending kindergarten in a general education classroom. He received weekly school-based math and reading intervention services as a result of being retained, and he had no diagnoses. After episodes of noncompliance began to impact his academic performance in the clinic setting, he was referred for compliance training. Francis' mother had received some compliance training assistance as a part of routine clinic services but had never been exposed to ECT. Francis' teacher was a 35-year-old Caucasian female with a Master's degree in Education. She was currently in her twelfth year of teaching.

Settings

Parent training workshops were conducted at the university-based clinic for both Francis and Samuel, and at a daycare facility for Taylor. Collection of baseline, treatment, and follow-up compliance took place at each child's home with a parent delivering requests to their child. Generalized effects of compliance training were assessed in each child's school classroom. For assessments of generalization, teachers of participants delivered requests and child compliance was recorded via direct observation in the child's classroom.

Materials and Measures

iPods

iPods were used to collect Errorless Compliance Training data in the home. Parents used iPods to video record Errorless Compliance Training sessions with their child by placing the iPod in an unobtrusive place. iPod cameras were directed towards the child, allowing child compliance behavior and parental commands to be captured by video and audio.

Child Compliance

Child compliance behavior served as the primary dependent measure in this study. Child compliant behavior was defined as initiating and completing a response within 5 seconds. If a child failed to initiate and complete a response within 5 seconds, the child's behavior was scored as noncompliant. Compliant behavior was measured through direct observation of compliance to commands. Commands were presented to the child by their parent in the home and behavior was recorded as either compliant or noncompliant by the child's parent. Parents video recorded sessions via iPod for data collection purposes. Data were obtained and assessed from the iPod weekly.

For generalization purposes, compliant behavior was measured through direct observation of compliance to commands delivered by the child's teacher in the classroom. Behavior was measured as either compliant or noncompliant. A graduate student trained in behavioral observations observed all Errorless Compliance Training generalization sessions in the school. Interobserver agreement was obtained for 50% of all generalization sessions.

Parenting Stress Index (PSI-SF)

The Parenting Stress Index Short Form (PSI; Abidin, 1995) was administered to assess the level of stress present in the parent-child relationship. The Parenting Stress Index is comprised of 36 questions and addresses the following three domains: internalizing symptoms, relationships, and family level of functioning. The PSI-SF was developed from factor analysis of the Parenting Stress Index Long Form. Data indicate that Short Form and Long From versions correlated at .94 for Total Stress. Test-retest data for the PSI-SF are available for a normative sample of 800 children. A Cronbach's alpha value of .85 indicates acceptable internal consistency. The PSI-SF has been shown to not produce differences in responding based on gender (Baker et al., 2003). Parent participants completed the PSI both before engaging in Errorless Compliance Training procedures and following the completion of the study.

Behavior Intervention Rating Scale (BIRS)

The Behavior Intervention Rating Scale Appendix F) was used as a measure social validity of ECT (BIRS; Von Brock & Elliott, 1987). The BIRS is an extension of the Intervention Rating Profile (IRP-15; Martens et al., 1985). Nine items were added to the IRP-15 to include 24 items to be rated by the child's teacher as a measure of social validity. Items are rated on a 6-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree.

The BIRS has an alpha coefficient of .97 for the entire scale. Factor analysis of the BIRS identified three domains: acceptability, effectiveness, and time of effect, with alpha levels of .97, .92, and .87, respectively (Elliot & Treuting, 1991). Moderate to strong relations were identified through correlational analysis. The acceptability factor

replicates the IRP-15, whereas the effectiveness and time of effect factors serve as a measure of treatment effectiveness. Whereas the time factor consists of just two items, time is believed to have an impact on other areas of intervention acceptability (Elliott & Treuting, 1991).

Children's Intervention Rating Profile (CIRP)

The Children's Intervention Rating Profile (Appendix G) is a child version of the Intervention Rating Profile and assesses social validity of interventions as rated by children (CIRP; Witt & Elliott, 1985). The CIRP is comprised of seven questions concerning treatment effectiveness and responses are rated on a seven-point Likert scale. The CIRP contains only one general acceptability factor and has an alpha coefficient of .86 (Turco & Elliott, 1986). A modification to the CIRP included reading the questions aloud to participants. It is unknown if this change has altered psychometric properties of the CIRP.

Research Design

A nonconcurrent multiple baseline design across participants was used to assess the effects of ECT. In a multiple baseline design, participants receive intervention in a staggered fashion. Multiple baseline designs are ideal when a behavior cannot be reversed, or when a behavior reversal is unwanted, as in ECT. Nonconcurrent multiple baseline designs using three participants meet single case design standards with reservations (Kratochwill et al., 2010).

Phase changes occurred following a compliance level equal to or greater than 75% for three or more days for a specific phase. Phase changes were followed by transition sessions, in which a command from the previous and subsequent phase were

both delivered. A minimum of five data points were collected for each phase to most accurately determine level, trend, and variability within data series (Kratochwill et al., 2010).

Procedures

Parent Training Workshop 1

Following recruitment of participants, parent-training sessions were conducted at the University of Southern Mississippi School Psychology Service Center for Francis and Samuel, and at the daycare facility for Taylor. Training began with an overview of Errorless Compliance Training procedures and completion of the PSI. Data collection procedures were then taught to and modeled for parents, as well as how to record videos via iPod. Parents were trained on operational definition of compliant behavior, and were then required to identify with 100% accuracy instances of compliant and noncompliant behavior. Performance feedback was delivered as necessary throughout the session. Parents were then given a baseline data collection sheet and were instructed to deliver each of the 12 commands a prescribed number of times. Procedural integrity data was collected to assure all steps were completed (E).

Baseline

Parents were instructed to begin collecting baseline data immediately following the first parent-training workshop. During baseline, parents delivered 12 requests each day using typical compliance strategies. Parents scored each command with either a check for completion of the request or a minus sign for noncompliance. Parents were instructed to respond to noncompliant behavior as usual.

Video recordings of participant compliance were collected weekly from participants throughout Errorless Compliance Training. Errorless Compliance Training videos were stored on an iPod and were downloaded to a password-protected laptop for data analysis. The recordings were used to assess data for level, trend, and stability of compliance with parental requests. Interobserver agreement and treatment integrity data were assessed based on video recordings as well (Appendix J).

Baseline assessment of child compliance in the school setting was completed through teacher delivery of compliance probes in the child's classroom. Untrained teachers delivered 10 commands to participants three times each for assessment of child compliance levels. Interobserver agreement data were collected for 33% of baseline generalization sessions.

Hierarchy Development

Following collection of baseline data, compliance probabilities for each command were collected by dividing the number of times the child was compliant for each request by the total number of instances of the command, and the multiplied by 100.

After calculations, the commands were arranged from highest to lowest probability, and then divided into four levels. Each level contained three commands. An individualized data sheet with each child's compliance hierarchy was made for collection of intervention data.

Parent Training Workshop 2

Using a nonconcurrent multiple baseline design, parents were trained individually in a time-lagged manner. During individualized training, parents were taught EID techniques, including making and maintaining eye contact, delivering only

one request at a time, and issuing requests in the imperative. Parents were trained on EID procedures through modeling and role-playing, and were given performance feedback as necessary. Parents were required to complete 100% of EID steps during the role-play probe to assure EID was implemented to its full integrity. Parents were also taught ECT procedures, including delivery of reinforcement for compliant child behavior and ignoring noncompliant behavior. Parents were additionally instructed to only deliver requests that coincided with the current phase of ECT. Strategies for avoiding requests (e.g., breaking up tasks) from subsequent levels of Errorless Compliance Training were discussed. (Drain, 2012). Integrity data were collected to assure all steps were completed (Appendix J).

Treatment, Phase 1

During Phase 1, only requests from Level 1 were delivered using the Intervention Data Collection Sheet (Appendix K). This included three requests selected as attaining the highest level of compliance during baseline. Parents rewarded compliant behavior with praise. Parents collected data four to six days per week and sessions lasted approximately ten minutes. Results were recorded on the intervention data sheet and via iPod.

Transition Sessions (Transitions 1, 2, and 3)

Transition sessions served as bridges across levels of Errorless Compliance Training. Requests delivered during transition phases consisted of one request from the previous phase and one from the subsequent phase. Transition sessions were initiated once a participant had reached a compliance level equal to or greater than 75% for three or more days for a specific phase.

Treatment, Phase 2, Phase 3, and Phase 4

Procedures indicated for Phase 1 were used in Phases 2, 3, and 4, with the exception of requests issued. Phase 2 only included Level 2 commands. Additionally, Phases 3 and 4 only included commands from their respective levels. Parents also had the opportunity to include requests from previous levels, but use of requests from previous levels was not systematically controlled.

Parent Training Workshop 3

During the third parent training session, parents completed post measures of the PSI and child participants completed the CIRP. Errorless Compliance Training was discussed once more, with a review of treatment procedures. Integrity data was collected to assure all steps had been completed (Appendix M).

Generalization Probes

Generalization probes were conducted in each child's classroom to determine the generalized effects of Errorless Compliance Training in the home to the school setting. While Errorless Compliance Training sessions were conducted in the home, generalization of Errorless Compliance Training level-specific school-based skills were assessed once per week by the child's teacher. Trained graduate students in the school psychology program observed these sessions for compliance (Appendix M). Interobserver agreement data were collected for 33% of baseline generalization and 50% of intervention generalization probes in the child's school.

Ten probes were delivered three times each to assess for generalization of baseline compliance. During intervention, ten probes were administered twice weekly to assess for each child's level of compliance to commands when delivered by his or her

teacher in the school setting. Requests delivered were adapted from Errorless Compliance Training skills in coordination with the child's current level in Errorless Compliance Training. If compliance fell below 70% during intervention phases, the child's teacher was to be trained on Errorless Compliance Training procedures, similar to parent training, using sequential modification, or training within the generalized setting (Cooper et al., 2007). Every participant exhibited compliance behavior above 70% during intervention, so no teacher trainings occurred.

Interobserver Agreement, Procedural Integrity, and Treatment Integrity

Interobserver Agreement (IOA)

Parents were trained and instructed to record Errorless Compliance Training sessions with an iPod. Using videos recorded via iPod, trained graduate students watched videos and recorded child compliance. Compliance was recorded as 'yes' or 'no,' indicated by a check mark or a minus sign. Using an iPod, as opposed to completing observations in the home, allowed for feasibility of data collection for trained graduate students. IOA was calculated using the Exact Count-per-Interval IOA method detailed by Cooper et al. (2007). The number of occurrences was divided by the total number of intervals, and then multiplied by 100.

IOA data were collected for 40% of baseline observations for Taylor, 42.86% of baseline observations for Samuel, and 33.33% of baseline observations for Francis via iPod recording sessions of ECT.

In baseline, IOA was 100% for all participants, signaling complete agreement. IOA data were collected for 30.77% of intervention observations for Taylor, 32.14% intervention of observations for Samuel, and 30.77% of intervention observations for

Francis. In intervention, IOA was 100% for Francis and 97.43% for both Taylor and Samuel (range = 66.66-100%)

For generalization baseline sessions, IOA was assessed for 33.33% of observations for each participant. IOA was 100% for all participants. For generalization intervention sessions, IOA was assessed for 50% of sessions for all participants. IOA was 98.75% for Samuel and Francis (range = 90=100) and 100% for Taylor.

Kappa was also calculated as a measure of interobserver agreement, as a more robust measure of agreement that accounts for chance. Kappa was calculated using Uebersax's (1987) formula. Values obtained from Kappa calculations range from -1.00 to +1.00. Values considered to be excellent agreement are greater than 0.75, good agreement falls between 0.60 and 0.74, fair agreement falls between 0.40 and 0.59, and values less than 0.40 have poor agreement (Cicchetti, 1994; Watkins & Pacheco, 2000).

For baseline of ECT, Kappa was 1.000 for every participant. For intervention of ECT, Kappa was 0.947 for Taylor (range= 0.306-1.000), 0.951 for Samuel (range = 0.310-1.000), and 1.000 for Francis.

For generalization of baseline, Kappa was 1.000 for every participant. For generalization during intervention, Kappa was 1.000 for Taylor and 0.947 (range= 0.578-1.000) for Samuel and Francis.

Procedural Integrity

Procedural integrity data were collected during every parent training session. To ensure that all necessary steps of parent training were implemented to their full extent, procedural integrity checklists (Appendices F, G, H, and I) were completed by the primary investigator as well as another graduate student. Procedural integrity was

calculated by dividing the number of steps completed by the total number of steps and multiplying by 100. IOA for procedural integrity was collected for every parent training session, by dividing the number of completed steps by the total number of steps. Procedural integrity for parent training sessions was 100% across all trainings for all parents.

Treatment Integrity

Treatment integrity was assessed for all video recordings of baseline data collection and ECT sessions. Implementation of ECT was assessed through viewing video recordings of procedures within the home using a treatment integrity checklist (Appendix J). If parent integrity fell below 85%, retraining was to be implemented. Retraining procedures included a review of data collection procedures followed by the parent demonstrating at least 90% accuracy in implementation of errorless compliance training procedures. Treatment integrity of implementation of ECT procedures was 100% for Francis' mother. Both Samuel's (*M*=98.57, range = 80-100) and Taylor's (*M*=98.46, range = 80-100%) mothers had two retraining sessions each, as implementation of ECT fell below the 85% criterion.

Data Analysis

Intervention effects were evaluated through visual analysis. Graphs of obtained data were assessed for magnitude, trend, and variability of change throughout the intervention process. Visual analysis of data was supplemented through statistical analysis of intervention effects.

Nonoverlap of All Pairs.

Effect sizes of child compliant behavior were calculated using Nonoverlap of All Pairs (NAP; Parker & Vannest, 2009). NAP is a nonparametric statistic that measures overlap between all data points. When calculating NAP, every data point in one phase is compared to every data points in another phase (e.g., baseline to intervention). NAP values were calculated according to procedures described by Parker and Vannest (2009), with strong effects falling between 0.93 and 1.00, medium effects from 0.66 to .92, and weak effects between 0.00 and 0.65. Parker and Vannest (2009) have found NAP scores to be related to the R^2 effect size (Rho = .92).

Tau-U.

Tau-U (Parker, Vannest, Davis, & Sauber, 2011) was also used to calculate the amount of nonoverlap between all phases of Errorless Compliance Training. Tau-U has been shown to compensate for the weaknesses of other nonoverlap statistics, as it allows for control of trend in baseline and intervention phases (Parker et al., 2011). Given Tau-U's ability to control for trend, it may be considered a more conservative estimate of intervention effect than NAP. No published guidelines for interpretation of Tau-U are available, but due to similarities in how NAP and Tau-U scores are derived, NAP guidelines (Parker & Vannest, 2009) may be considered appropriate (e.g., O'Handley, Radley, & Whipple, 2015).

CHAPTER III – RESULTS

Child Compliance

Visual Analysis

The percentages of child compliance are presented graphically as Figure 1 and were analyzed using single case methodology (Kazdin, 1982). Compliance data for Taylor was stable during baseline (*M* = 38.33%, range = 33.33-41.67 %) and generalization baseline data appeared stable as well (*M*= 56.57%, range 50-60%). The implementation of ECT procedures resulted in an immediate change in level for Taylor during compliance (*M* = 99.67%, range = 66.67-100%) and generalization sessions (*M* = 100%). Additionally, results were maintained during all four phases of ECT while maintaining high stability as lower probability requests were gradually introduced.

Compliance data for Samuel were variable during baseline (*M* = 49.95%, range = 8.33-66.67%) while demonstrating a decreasing trend. Generalization baseline compliance data for Samuel was variable as well (M = 33.33%, range = 10-80%). Implementation of ECT for Samuel resulted in variable responding (M = 78.57%, range 0 = 100%). Generalization of ECT resulted in an immediate increase in level and decrease of variable responding (*M* = 98.75%, range = 90-100%) and maintained throughout all intervention phases.

Compliance data for Francis were variable during baseline (*M* = 46.30, range = 16.67-66.67) and demonstrated a decreasing trend. Generalization baseline compliance data for Francis was variable as well (*M* = 43.33%, range = 10-60%). When ECT was implemented, an immediate change in level and decrease in variability was apparent for

both compliance (*M* = 100%) and generalization (*M* = 100%). These values maintained throughout all intervention phases of ECT.

Statistical Analysis

The effect of ECT on child complaint behavior was also assessed using NAP (Parker & Vannest, 2009). Tau-U was additionally calculated to evaluate nonoverlapping data between conditions, controlling for trend (Parker et al., 2011). In general, rapid improvements in level of compliance were observed for each participant following the introduction of ECT. Across all participants, NAP indicated a strong effect (NAP = 0.94), while Tau-U indicated a moderate effect (Tau-U = 0.87).

Assessment of both NAP and Tau-U indicated a strong intervention effect for Taylor (NAP = 1.00, Tau-U = 1.00). When assessing generalization data using NAP and Tau-U, a strong intervention effect was apparent (NAP = 1.00, Tau-U = 1.00). NAP indicated a medium effect for Samuel (NAP = 0.81) while Tau-U produced a weak intervention effect (Tau-U = 0.62). When assessing generalization data using NAP and Tau-U, a strong intervention effect was apparent (NAP = 1.00, Tau-U = 1.00). Assessment of both NAP and Tau-U indicated a strong intervention effect for Francis (NAP = 1.00, Tau-U = 1.00). When assessing generalization data using NAP and Tau-U, a strong intervention effect was apparent (NAP = 1.00, Tau-U = 1.00).

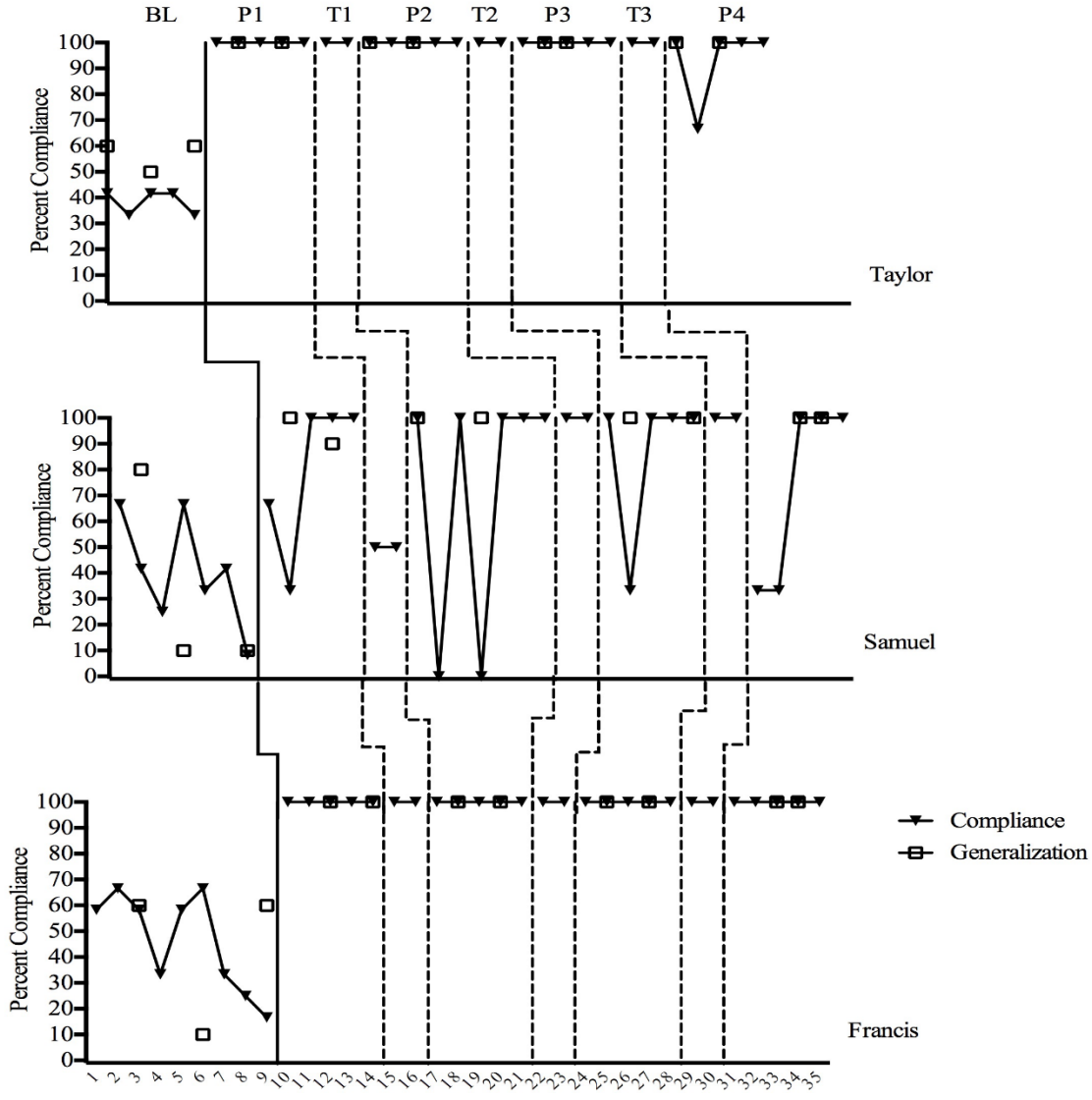

Figure 1. Child compliance across participants across phases.

Parenting Stress Index

All parent participants completed the PSI (PSI; Abidin, 1995) both before and after the study to assess if, and by how much, parenting stress may decrease as a result of ECT. It should be noted Taylor's, Samuel's, and Francis' mothers' scores all indicated defensive responding during both pre and post examinations. Any score of ten or below indicates the

possibility of defensive response, therefore influencing the measure as a whole. Scores are detailed below.

Taylor

Prior to intervention, Taylor's mother rated her Parental Distress in the 95th percentile, Parent-Child Dysfunctional Interaction in the 99th percentile, and was in the 95th percentile on the Difficult Child scale (Table 1). Combined, her Total Stress level was 115, falling in the 99th percentile. Upon completion of ECT, Taylor's mother reported a decrease in Parental Distress to the 80th percentile and a decrease in Parent-Child Dysfunctional Interaction to the 95th percentile. Taylor's mother's Total Stress index upon conclusion of ECT was 104, in the 95th percentile.

Samuel

Prior to intervention, Samuel's mother rated her Parental Distress in the 25th percentile, Parent-Child Dysfunctional Interaction in the 99th percentile, and fell in the 95th percentile on the Difficult Child scale. Samuel's mother's Total Stress level was rated as 104, in the 95th percentile. Samuel's mother was the only participant to not report a reduction in parenting stress levels. Samuel's mother's rating for Parent-Child Dysfunctional Interaction increased six points, yet remained in the 99th percentile. Her Difficult Child score increased three points to the 99th percentile. Samuel's mother's Total Stress index increased to a score of 113, in the 99th percentile.

Francis

Prior to intervention, Francis' mother rated her Parental Distress in the 10th percentile, Parent-Child Dysfunctional Interaction in the 35th percentile, and fell in the

35th percentile on the Difficult Child scale. Her Total Stress score pre-intervention was rated as 56, in the 20th percentile. Following ECT, Francis' mother's Parent-Child Dysfunctional Interaction and Difficult Child scores remained the same, while her Parental Distress score fell two points to 15, yet still remained in the 10th percentile. Francis' mother had a Total Stress score of 54, falling in the 15th percentile.

Table 1

Pre and Post Parenting Stress Index Results

	Taylor	**Samuel**	**Francis**
Parental Distress	95% / 80%tile	25% / 25%tile	10% / 10%tile
Parent-Child Dysfunctional Interaction	99% / 95%tile	99% / 99%tile	35% / 35%tile
Difficult Child	95% / 95%tile	95% / 99%tile	35% /35%tile
Total Stress	99% / 95%tile	95% / 99%tile	20% / 15%tile

Note: (PSI; Abidin, 1995).

Treatment Acceptability

Behavior Intervention Rating Scale (BIRS)

Each participant's teacher completed the BIRS upon conclusion of data collection. The BIRS is comprised of the acceptability, effectiveness, and time of effect domains (Elliot & Treuting, 1991). Factor one is comprised of the 15 questions commonly seen on the IRP-15 (Martens et al., 1985). Factor two is comprised of seven items, and assesses effectives of the intervention. Factor three assesses time of effectiveness and is comprised of two items. Increasing scores indicate increasing external validity in the direction of the score.

Taylor's teacher endorsed moderately high ratings on the Acceptability (M = 4.20), Effectiveness (M = 3.71) and Time of Effectiveness factor (M = 5.00). Overall,

Taylor's teacher reported an average acceptability rating of 4.13. Samuel's teacher reported consistently low levels of intervention Acceptability (M = 2.40), Effectiveness (M = 1.43), and Time of Effectiveness (M = 2.50). Samuel's teacher reported a low overall acceptability score of 2.13. Francis' teacher indicated moderate ratings on the Acceptability (M = 3.13) and Time of Effectiveness (M = 3.00) factors, and slightly positive ratings on the Effectiveness factor (M = 3.00). Francis' teacher's overall acceptability rating was 3.13.

Children's Intervention Rating Profile (CIRP)

Each child participant completed the CIRP (CIRP; Witt & Elliott, 1985) upon conclusion of Errorless Compliance Training. The CIRP is comprised of one general acceptability factor assessing the child's acceptability of a certain intervention. Seven items are scored on a six-point Likert scale, with scores ranging from 6 to 42. Taylor rated ECT on the general acceptability factor as a 33 and Francis as a 38. Samuel rated ECT as less acceptable, at 16. Increasing scores indicate increasing external validity. As noted earlier, all questions were read aloud to participants, as seen in previous studies (Fiala & Sheridan, 2003).

CHAPTER IV - DISCUSSION

The purpose of this study was to assess the generalization of compliance behavior from the home to the school setting. Using ECT procedures, three children exhibited increased compliance to directives given at home, as well as generalization to the school setting in which no compliance training procedures were implemented.

Research Question 1

All participants exhibited increased compliance to parental requests in the home setting following implementation of ECT. Data appear similar to other studies in which increases in behavior were attained with the implementation of ECT (Ducharme, Spencer, Davidson, & Rushford, 2002; Ducharme & Ng, 2012). An increase in compliance behavior in the training setting (i.e., home) can be attributed to behavioral momentum. The high probability commands that are used in the beginning of ECT initiated a chain of compliance behavior that persisted through the addition of low probability commands. These high probability commands served as an abolishing operation for future noncompliant behavior (Cooper et al., 2007).

Research Question 2

Previous studies have assessed the generalization of trained to untrained requests using ECT (Ducharme & Popynick, 1993; Ducharme & Drain, 2004). Similarly, the current study also found generalized effects to untrained requests for all three participants. But, this study was unique in that it additionally assessed generalization of child compliance from the training setting (i.e., home) to a novel setting (i.e., school) following implementation of ECT. Results indicated carryover effects of compliance in

the untrained setting for all participants. These generalized effects of ECT can be attributed to multiple factors.

The training of multiple exemplars likely contributed to generalization of compliance behavior. The twelve directives used in the home setting allowed the child participants access to multiple stimuli in the training setting. This increased the participants' likelihood of responding to unfamiliar stimuli, such as the directives used in the school setting (Cooper et al., 2007).

Participants were also able to come into contact with a reinforcer (i.e., praise) for compliance in the school setting. Although teachers were not trained to praise participants for compliance behavior, all teacher participants chose to praise child participants. Teacher praise also occurred intermittently, further reinforcing child compliance, as child participants could not discriminate when access to a reinforcer would be available.

Several mechanisms of action may have contributed to the generalized effects of ECT. The carryover effects of child compliance from the trained setting to an untrained setting set this study apart from other ECT studies. Additionally, the immediacy of generalized effects seen in this study support the notion that programming for generalization can be highly effective.

Research Question 3

Concerning the third research question, Samuel's mother reported an elevated level of total parenting stress, whereas the other two mothers exhibited small reductions in parental stress. It is possible that the variability of responding evidenced in Samuel's data contributed to high parenting stress levels during implementation of ECT. While

Samuel eventually responded to ECT, his data are significantly more variable than the other two participants.

Taylor's and Francis' mothers both reported minimal decreases in parental stress following ECT. The keystone nature of compliance (Barnett et al., 1996) allows for the alteration of other variables when noncompliance is targeted in intervention, such as parental stress. It is possible that increases in child compliance in both the home and school settings influenced these mothers' reports of lessened parental stress.

Limitations

Several limitations should be noted in the present study. Two participants withdrew from the study prior to implementation of intervention. It is hypothesized that the perceived difficulty of data collection and intervention procedures attributed to attrition, therefore decreasing external validity of ECT. Because the BIRS was given to teacher participants only and not parent participants, this study lacks data on parent perception of ECT as a behavioral intervention.

Also, only three participants were included, as is typical in single case design research. Future research should include a larger sample size to replicate results over a larger sample. Additionally, the participants in this study were all African American males with intervention procedures implemented by African American mothers. These results may not generalize to other populations, so it is recommended that future researchers expand their participant pool.

As mentioned previously, the organization of commands differed from previous ECT studies. Because only twelve commands were included in baseline, three commands were utilized in each phase of ECT. Commands used were still grouped from

high to low probability. While this organization method differed slightly from the percentile method as seen in other studies (Ducharme & Drain, 2004), results demonstrated increases in child compliance. However, it is unknown what effect the command grouping might have fully had and that future researchers should investigate the need to group commands in percentiles as suggested by Ducharme et al. (2004).

Another limitation is that data were collected nonconcurrently. Nonconcurrent multiple baseline designs are regarded as less rigorous than standard multiple baseline designs in that data collection is not completed at the same time for all participants (Watson & Workman, 1981). This alteration weakens experimental control that can only be obtained through concurrent measurement. In an effort to deliver treatment as soon as possible, data were collected nonconcurrently, as it was unknown when additional families would be available for participation. While concurrent data collection increases internal validity, other measures were taken to address this as well. Two independent observers met 100% agreement for every ECT training session for every participant, and IOA was assessed for all ECT sessions yielding high integrity. Retraining procedures were implemented for all instances that were not met with at least 85% integrity to assure accuracy in implementation.

It should also be mentioned that EID procedures were taught to parents as a part of the ECT intervention package. However, no component analysis was conducted. Each EID component was taught to each parent, and it is unknown which components of EID parent participants were already using effectively prior to intervention. As no component analysis was conducted, it is unknown if and the extent to which components of EID resulted in direct increases in child compliant behavior. Prior research (Everett et al.,

2005) supports the use of eye contact and contingent praise as components that lead to increased child compliant behavior. Future research should assess which EID components lead to increased child compliant behavior in the ECT context.

Conclusion

In the current study, compliance behavior in the home generalized to the school setting for all three participants using Errorless Compliance Training procedures. This is notable in that this is the first study in which generalized setting effects were assessed for ECT. Due to the co-occurrence of noncompliance in both the home and school settings, noncompliance is an issue for parents and educators alike. It may be advantageous for schools to target noncompliance in the classroom setting with home-based compliance training, given the results of this study. Because addressing behavioral issues in the classroom can be disruptive for both the target child and his or her peers, home-based compliance training may be a better option (De Martini-Scully et al., 2000). While results of this study indicate the generalized effects of ECT to an untrained setting, additional research is still required in this area.

APPENDIX A – IRB Approval Document

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI.

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: CH15010903
PROJECT TITLE: The Effects of Errorless Compliance Training Interventions on Compliance Behavior of Elementary Students in the Home and Generalization in the School Setting
PROJECT TYPE: Change to a Previously Approved Project
RESEARCHER(S): Hannah J. Cavell
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 03/03/2015 to 03/02/2016
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX B – Parental Consent Document

Title of Study: The Effects of Errorless Compliance Training interventions on compliance behavior of elementary students in the home and generalization in the school setting.

Purpose: You are being asked to participate in a study that is evaluating the generalized effects of an intervention on child noncompliance titled Errorless Compliance Training from the home to school setting. The goal of this intervention is to decrease the frequency of a child's noncompliant behavior in the school setting, when the intervention is being implemented in the home.

Procedure: If you agree to participate in this study, you will be asked to perform several tasks throughout the study. Following your child being referred for noncompliant behavior through his or her school, you will attend training sessions at the University of Southern Mississippi School Psychology Service Center, where you will learn components of the Errorless Compliance Training procedure and will then implement the steps in your home five days per week.

During baseline, you will collect data on requests to which your child complies with. Next, this data will be assessed for compliance, and requests will be divided into four levels, correlating with requests in which your child is likely to comply with based on percentages. You will gradually implement all requests from all four levels, beginning with requests in which your child is likely to comply with.

Throughout the study, compliance probes will be conducted at your child's school with his or her teacher once per week. Trained graduate students will assess if your child does or does not complete a given request. If your child does not show generalization of

the Errorless Compliance Training procedure to a school setting, the procedure will be implemented with your child's teacher. At the end of the study, you will complete rating scales based on your Errorless Compliance Training experience.

Benefits to Participation: The study may have beneficial effects for you and your child. You may learn a new way to improve the likelihood that your child will comply with given requests at home, and the intervention may result in compliance gains at your child's school as well. Your child may exhibit less noncompliant behavior, which may lead to gains in both the home and school.

Risks to Participation: There are minimal risks related to the study. Potential risks include not enjoying Errorless Compliance Training sessions at home. It is possible that some children may not enjoy these sessions either. Also, you may be concerned with the time it takes to implement the intervention.

Voluntary Nature of the Study/Confidentiality: Your participation in the study is entirely voluntary and you may refuse to complete the study at any point without penalty, prejudice, or loss of benefits. All data collected from, checklists, questionnaires and observations will be recorded in the password-protected computer belonging to the Principal Investigator. Only people directly connected to the study will have access to this or other information. All identifying information will be removed before the dissemination of results from the study. Your name and other identifying information will not be used in the research papers, any submission to a professional journal for publication, or presentation.

Parent's Consent: If you agree to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Hannah Cavell (email: hannah.cavell@eagles.usm.edu) or Dr. Keith Radley (Phone: 601-266-5255; email: keith.radley@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee at USM, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820.

Sincerely,

Hannah J. Cavell, B.A.	Keith Radley, Ph.D.
School Psychologist-in-Training	Supervising School Psychologist
Department of Psychology	Department of Psychology
The University of Southern Mississippi	The University of Southern Mississippi

THIS SECTION TO BE COMPLETED BY PARENT

Please Read and Sign the Following:

I have read the above documentation and consent to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to participate under the conditions stated. I have also received a copy of this consent. I understand that I will be asked to implement a compliance training procedure called Errorless Compliance Training at home, and that compliance sessions and possible Errorless Compliance Training will be conducted in the classroom with my child's teacher. In order to do so, I will be required to complete four training sessions, to implement the intervention, and to complete questionnaires to assess my satisfaction with the intervention. I further understand that all data collected in this study will be confidential and that my name and the students' names will not be associated with any data collected. I understand that I may withdraw my consent for participation at any time without penalty, prejudice, or loss of privilege.

APPENDIX C – Teacher Consent Document

Title of Study: The Effects of Errorless Compliance Training interventions on compliance behavior of elementary students in the home and generalization in the school setting.

Purpose: You are being asked to participate in a study that is evaluating the generalized effects of an intervention on child noncompliance titled Errorless Compliance Training from the home to school settings. The goal of this intervention is to decrease the frequency of a child's noncompliant behavior in the school setting, when the intervention is being implemented in the home.

Procedures: If you agree to participate in this study, you will be asked to perform several tasks throughout the study. Following a referral of a child in your class for noncompliant behavior, you will conduct weekly compliance training probes with the child in your classroom, while the child's parents implement an intervention at home. If data indicate that the student is not showing generalized effects of errorless compliance training procedures, you will implement Errorless Compliance Training sessions in your classroom following training by the Principal Investigator.

During baseline, you will collect data on requests to which your child complies with. Next, this data will be assessed for compliance, and requests will be divided into four levels, correlating with requests in which your child is likely to comply with based on percentages. You will gradually implement all requests from all four levels, beginning with requests in which your child is likely to comply with. At the end of the study, you will complete rating scales based on your Errorless Compliance Training experience.

Benefits and risks: The study may have beneficial effects for your student. Your student may exhibit generalized compliance gains in the classroom and you may learn a new way to improve the likelihood he or she will comply with given request. Your student may exhibit less noncompliant behavior, which may lead to gains in the classroom as well. There are minimal risks related to the study. Potential risks include not enjoying compliance probe or Errorless Compliance Training sessions, and it is possible that your student may not enjoy these sessions either. Also, you may be concerned with the time it takes to implement the intervention.

Voluntary Nature of the Study/Confidentiality: Your participation in the study is entirely voluntary and you may refuse to complete the study at any point without penalty, prejudice, or loss of benefits. All data collected from, checklists, questionnaires and observations will be recorded in the password-protected computer belonging to the Principal Investigator. Only people directly connected to the study will have access to this or other information. All identifying information will be removed before the dissemination of results from the study. Your name and other identifying information

will not be used in the research papers, any submission to a professional journal for publication, or presentation.

Teacher Consent: If you agree to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Hannah Cavell (email: hannah.cavell@eagles.usm.edu) or Dr. Keith Radley (Phone: 601-266-5255; email: keith.radley@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee at USM, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820.

Sincerely,

Hannah J. Cavell, B.A. School Psychologist-in-Training Department of Psychology The University of Southern Mississippi	Keith. Radley, Ph.D. Supervising School Psychologist Department of Psychology The University of Southern Mississippi

THIS SECTION TO BE COMPLETED BY TEACHER

Please Read and Sign the Following:

I have read the above documentation and consent to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to participate under the conditions stated. I have also received a copy of this consent. I further understand that all data collected in this study will be confidential and that my name, my student's name, and their parents' will not be associated with any data collected. I understand that I may withdraw my consent for participation at any time without penalty, prejudice, or loss of privilege.

_____
Printed Name of Child

_____
Printed Name of Teacher

_____ _____
Signature of Teacher *Date*

APPENDIX D – Child Assent Document

Purpose of the Research

We are asking you to take part in a research study because we are trying to learn more about helping children behave better.

Procedure/Intervention/Method

If you agree to be in this study, your parent will ask you to do things you normally do (commands) around the house. There will be an iPod in the room recording you so we can see if you do or don't do what you are asked to do. Your teacher will also ask you similar questions at school. For example, you may be asked to pick up a toy or put your plate in the sink. After that, you'll answer a couple questions about what it was like to be asked these questions by your parent and teacher.

Risks

By participating in this project, there may be several risks. You may not like completing the commands that your parent and teacher give you. You may also feel nervous or uncomfortable being video recorded. If you feel nervous or uncomfortable, your teacher and parent will try to help you feel better and find ways to make it easier for you. If you have any questions, you can ask for help at any time. You also can choose not to participate at any time.

Benefits

Being in this study will help us to understand the best way to help kids behave better.

Alternative Procedures and Voluntary Participation

If you don't want to be in this study, you don't have to be in it. Remember, being in this study is up to you and no one will be upset if you don't want to participate. You can change your mind later if you want to stop. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say "yes" you can still decide not to do this.

Confidentiality

All of your records about this research study will be kept locked up so no one else can see them. We will not use your name when we talk about this study. We will not share what you write with your teacher or other students in your class.

Person to Contact

You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me, Hannah Cavell, at (601) 266-5255.

Consent

Signing my name at the bottom means that I agree to be in this study. My parents and I will be given a copy of this form after I have signed it.

_____

Printed Name

_____ _____

Sign your name on this line Date

_____

Printed Name of Person Obtaining Assent

_____ _____

Signature of Person Obtaining Assent Date

APPENDIX E – Intervention Integrity Checklist

1. iPod camera is turned on and facing the child.

   Yes No

2. Parent only delivers commands from the current level of Errorless Compliance Training.

   Yes No

3. Parent ignores any noncompliant behavior.

   Yes No

4. Parent praises child for compliance when applicable.

   Yes No

Steps completed correctly: _____

Steps possible: _____

Percent Integrity: _____

APPENDIX F – Behavior Intervention Rating Scale

1=Strongly Disagree 2=Disagree 3=Slightly Disagree 4=Slightly Agree 5=Agree 6=Strongly Agree

1. This would be an acceptable intervention for noncompliance.

   1 2 3 4 5 6

2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.

   1 2 3 4 5 6

3. The intervention should prove effective in changing a student's noncompliant behavior.

   1 2 3 4 5 6

4. I would suggest the use of this intervention to other teachers.

   1 2 3 4 5 6

5. The student's noncompliant behavior was severe enough to warrant use of this intervention.

   1 2 3 4 5 6

6. Most teachers would find this intervention suitable for noncompliant behavior.

   1 2 3 4 5 6

7. I would be willing to use this intervention in the classroom setting.

   1 2 3 4 5 6

8. The intervention would *not* result in negative side-effects for students.

   1 2 3 4 5 6

9. The intervention would be an appropriate intervention for a variety of students.

   1 2 3 4 5 6

10. The intervention is consistent with those I have used I have used in classroom settings.

    1 2 3 4 5 6

11. The intervention was a fair way to handle noncompliant behavior.

    1 2 3 4 5 6

12. The intervention is reasonable for the behavior problem described.

    1 2 3 4 5 6

13. I like the procedures used in the intervention.

    1 2 3 4 5 6

14. The intervention was a good way to handle the student's noncompliance problem.

    1 2 3 4 5 6

15. Overall, the intervention would be beneficial for the classroom.

    1 2 3 4 5 6

16. The intervention would quickly improve classroom behavior.

    1 2 3 4 5 6

17. The intervention would produce a lasting improvement in student behavior.

    1 2 3 4 5 6

18. The intervention would improve a noncompliant student's behavior to the point that it would not noticeably deviate from other classmates' behavior.

    1 2 3 4 5 6

19. Soon after using the intervention, a teacher would notice a positive change in noncompliant behavior.

    1 2 3 4 5 6

20. A student's behavior will remain at an improved level even after the intervention is discontinued.

    1 2 3 4 5 6

21. Using the intervention should not only improve the student's behavior in the classroom, but also in other settings (e.g., other classrooms, home).

    1 2 3 4 5 6

22. When comparing a noncompliant student with a compliant peer before and after the use of the intervention, the student's and the peer's behavior would be more alike after using the intervention.

    1 2 3 4 5 6

23. The intervention should produce enough improvement in a student's behavior so the behavior no longer is a problem in the classroom.

    1 2 3 4 5 6

24. Other behaviors related to noncompliant behavior are likely to be improved by the intervention.

    1 2 3 4 5 6

(BIRS; Elliott & Treuting, 1991)

APPENDIX G – Children's Intervention Rating Profile

Errorless Compliance Training was fair.

1 2 3 4 5 6

Errorless Compliance Training may cause problems with my friends.

1 2 3 4 5 6

There are better ways to increase compliance than Errorless Compliance Training.

1 2 3 4 5 6

Errorless Compliance Training would be a good method to use with other children.

1 2 3 4 5 6

I liked Errorless Compliance Training.

1 2 3 4 5 6

I think Errorless Compliance Training helped increase my compliance.

1 2 3 4 5 6

I think that Errorless Compliance Training has helped me do better in school.

1 2 3 4 5 6

(CIRP; Witt & Elliott, 1985)

APPENDIX H – Session One Procedural Integrity Checklist

Parent Name: _____ Date: _____

Observer: _____ IOA: _____

Procedure Steps:	Yes	No
1. Parental consent obtained		
2. Child assent obtained		
3. Overview of ECT		
4. Parents taught iPod recording procedures		
5. Operational definitions of compliance taught to parents		
6. Parents successfully able to identify examples and non-examples of compliance		
7. Constructive performance feedback provided as needed		
8. Compliance Probability Checklist completed		
9. Parenting Stress Index completed		

Steps completed correctly: _____

Steps possible: _____

Percent Integrity: _____

APPENDIX I – Session Two Procedural Integrity Checklist

Parent Name: _____ Date: _____

Observer: _____ IOA: _____

Procedure Steps:	Yes	No
1. Individualized baseline data sheets given to parents		
2. Effective Instruction Delivery techniques taught to parents		
3. Data collection procedures taught to parents		
4. Modeling of Errorless Compliance Training baseline		
5. Role playing of Errorless Compliance Training baseline		
6. Constructive performance feedback given to parents		

Steps completed correctly: _____

Steps possible: _____

Percent Integrity: _____

APPENDIX J – Sample Baseline Data Collection Sheet

	1	2	3	4	5	6	7
Turn on the music.							
Dance to the music.							
Turn off the music.							
Put on your (article of clothing).							
Take off your (article of clothing).							
Put away your (object).							
Walk into the bathroom.							
Flush the toilet.							
Wash your hands.							
Pick up the towel.							
Dry your hands.							
Come here.							

APPENDIX K – Sample Intervention Data Collection Sheet

Level 1		
Put on your hat.		
Dance to the music.		
Turn off the music.		
Put away your (object).		
Transition		
Put away your (object).		
Come here.		

APPENDIX L – Sample Generalization Data Collection Sheet

	Yes	No
Pick up your (object).		
Go get your (play item).		
Jump up and down.		
Go to the (area).		
Sit in he chair.		
Come to the table.		
Turn off the light.		
Turn on the light.		
Put your school bag (somewhere).		
Put (item) on the table.		

APPENDIX M – Session Three Procedural Integrity Checklist

Parent Name: _____ Date: _____

Observer: _____ IOA: _____

Procedure Steps:	Yes	No
1. Parent completion of PSI		
2. Child completion of CIRP		
3. Review of ECT procedures		

Steps completed correctly: _____

Steps possible: _____

Percent Integrity: _____

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